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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,583	02/13/2002	Yukio Tanaka	10873.877USWO	9698
23552	7590	01/10/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			DHARIA, PRABODH M	
			ART UNIT	PAPER NUMBER
			2673	
DATE MAILED: 01/10/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/049,583	<b>Applicant(s)</b> TANAKA ET AL.	
	<b>Examiner</b> Prabodh M Dharia	<b>Art Unit</b> 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10,43,44,47-49,52-55,58 and 64-69 is/are pending in the application.
- 4a) Of the above claim(s) 11-42,45,46,50,51,56,57,59-63 and 70-79 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10,43,44,47-49,58 and 64-69 is/are allowed.
- 6) ☒ Claim(s) 52-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06-04-02</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2673

1. **Status:** Receipt is acknowledged of papers submitted on 08-16-2004 under amendments have been placed of record in the file. Claims 1-10,43,44,47-49,52-55,58,64-69, are pending in this action.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 52-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (6,496,170 B1) in view of Kuijk (5,032,830).

Regarding Claim 52, Yoshida et al. teaches a display apparatus (Col. 3, Line 28) for conducting a display (Col. 3, Lines 28,29) by controlling a voltage applied to a display medium with a potential of pixel electrodes (Col. 3, Lines 54-65) and applying voltages with both positive and negative polarities to the display medium (Col. 7, Line 55 to Col. 8, Line 6), wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes (Col. 12, Lines 55-64, Col. 17, Lines 3-46, Col. 18, Lines 10-35), and a distribution of the capacitive coupling voltage is made different in a display region between a case where a positive voltage is applied to the display medium and a case where a negative voltage is applied thereto (Col. 11, Lines 57 -67, Col. 12, Lines 55-64, Col. 8, Lines 55 to Col. 9, Line 37, Col. 17, Lines 3-46, Col. 18, Lines 10-35).

Art Unit: 2673

However, Yoshida et al. fails to recite specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and a distribution of the capacitive coupling voltage is made different in a display region between a case where a positive voltage is applied to the display medium and a case where a negative voltage is applied thereto.

However, Kuijk recites and teaches specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and a distribution of the capacitive coupling voltage is made different in a display region between a case where a positive voltage is applied to the display medium and a case where a negative voltage is applied thereto (Col. 2, Lines 7-12, 41-50, Col. 5, Lines 21-26, Lines 31-33, Col. 7, Lines 17-28, Col.1, Lines 8-20).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate Kuijk teaching in teaching of Yoshida et al. to be able have a display system with rows and columns electrodes for presenting selection and data signals by means of which arrange of voltages dependent on the electro-optical display medium and row electrodes being capacitively coupled to the pixel electrodes; can be presented across the picture elements for purpose of picture display, without the picture quality seriously deteriorate due to leakage currents or flickers.

Regarding Claim 53, Yoshida et al. teaches the electrodes other than the pixel electrodes are common electrodes (Col. 8, Lines 55-65).

Art Unit: 2673

Regarding Claim 54, Yoshida et al. teaches a display apparatus (Col. 8, Line 39) comprising: a plurality of pixel electrodes (Col. 6, Line 48) arranged in a matrix (Col. 6, Line 36); switching elements connected thereto (Col. 6, Line 42); scanning electrodes (Col. 6, Lines 64, 23-25), video signal electrodes (Col. 7, Line 5-7, Col. 6, Lines 25-27); common electrodes (Col. 6, Line 55,56); a counter electrode (Col. 6, Lines 55,56, Lines 12,13); a display medium interposed between the pixel electrodes and the counter electrodes (Col.6, Lines 9-16); and storage capacitance formed between the pixel electrodes (Col. 6, Lines 54-57, Col. 7, Lines 14-26) and the common electrodes (Col. 6, Lines 55-56), wherein a capacitive coupling voltage from the scanning electrode, and a capacitive coupling voltage from the common electrode are allowed to have a distribution in a screen (Col. 8, Lines 55-65, Col. 17, Lines 3-46, Col. 18, Lines 10-35), whereby flickering and a brightness gradient are corrected simultaneously (Col. 11, Lines 57 –67, Col. 12, Lines 55-64, Col. 8, Lines 55 to Col. 9, Line 37, Col. 17, Lines 3-46, Col. 18, Lines 10-35).

However, Yoshida et al. fails to recite specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and a distribution of the capacitive coupling voltage is made different in a display region between a case where a positive voltage is applied to the display medium and a case where a negative voltage is applied thereto.

However, Kuijk recites and teaches specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and wherein a capacitive coupling voltage from the scanning electrode, and a capacitive coupling voltage from the common electrode are allowed to have a distribution in a screen (Col. 8, Lines 55-65),

Art Unit: 2673

whereby flickering and a brightness gradient are corrected simultaneously (Col. 2, Lines 7-12, 41-50, Col. 5, Lines 21-26, Lines 31-33, Col. 7, Lines 17-28, Col.1, Lines 8-20, maintaining proper gray scale and contrast Kuijk achieves proper brightness).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate Kuijk teaching in teaching of Yoshida et al. to be able have a display system with rows and columns electrodes for presenting selection and data signals by means of which arrange of voltages dependent on the electro-optical display medium and row electrodes being capacitively coupled to the pixel electrodes; can be presented across the picture elements for purpose of picture display, without the picture quality seriously deteriorate due to leakage currents or flickers.

Regarding Claim 55, Yoshida et al. teaches a display apparatus (Col. 8, Line 39) comprising: a plurality of pixel electrodes (Col. 6, Line 48) arranged in a matrix (Col. 6, Line 36); switching elements connected thereto (Col. 6, Line 42); scanning electrodes (Col. 6, Lines 64, 23-25), video signal electrodes (Col. 7, Line 5-7, Col. 6, Lines 25-27); common electrodes (Col. 6, Line 55,56); a counter electrode (Col. 6, Lines 55,56, Lines 12,13); a display medium interposed between the pixel electrodes and the counter electrodes (Col.6, Lines 9-16); and storage capacitance formed between the pixel electrodes (Col. 6, Lines 54-57, Col. 7, Lines 14-26) and the common electrodes (Col. 6, Lines 55-56), and the scanning electrodes of the stage concerned and the pixel electrodes (Col. 6, Lines 40-47), wherein a capacitive coupling voltage from the scanning electrode, and a capacitive coupling voltage from the common electrode are allowed to have a distribution in a screen, whereby flickering and a brightness gradient are

Art Unit: 2673

corrected simultaneously (Col. 11, Lines 57 –67, Col. 12, Lines 55-64, Col. 8, Lines 55 to Col. 9, Line 37, Col. 17, Lines 3-46, Col. 18, Lines 10-35).

However, Yoshida et al. fails to recite specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and a distribution of the capacitive coupling voltage is made different in a display region between a case where a positive voltage is applied to the display medium and a case where a negative voltage is applied thereto.

However, Kuijk recites and teaches specifically wherein a capacitive coupling voltage is superimposed on the pixel electrodes from electrodes other than pixel electrodes and wherein a capacitive coupling voltage from the scanning electrode, and a capacitive coupling voltage from the common electrode are allowed to have a distribution in a screen (Col. 8, Lines 55-65), whereby flickering and a brightness gradient are corrected simultaneously (Col. 2, Lines 7-12, 41-50, Col. 5, Lines 21-26, Lines 31-33, Col. 7, Lines 17-28, Col.1, Lines 8-20, maintaining proper gray scale and contrast Kuijk achieves proper brightness).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate Kuijk teaching in teaching of Yoshida et al. to be able have a display system with rows and columns electrodes for presenting selection and data signals by means of which arrange of voltages dependent on the electro-optical display medium and row electrodes being capacitively coupled to the pixel electrodes; can be presented across the picture elements for purpose of picture display, without the picture quality seriously deteriorate due to leakage currents or flickers.

Art Unit: 2673

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is informed that all of the other additional cited references either anticipate or render the claims obvious. In order to not to be repetitive and exhaustive, the examiner did draft additional rejection based on those references.

***Allowable Subject Matter***

5. Claims 1-10,43,44,47-49,58,64-69 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: Applicant has cancelled Claims 11-42,45,46,50,51,56,57,59-63,and 70-79and rewritten, the independent Claims 1,4,7,10,58, as per **OBJECTED** claims 4-10 of non-final office action mailed on 09-30-2004, which makes Claims 1-10,43,44,47-49,58,64-69 of application number 10049583 in condition for allowance.

a potential of a scanning electrode becomes a first potential level  $V_{gon}$  when the scanning electrode is selected and becomes substantially a second potential level  $V_{goff}$  during a retention period in which the scanning electrode is not selected, a potential of a common electrode that is a connection destination of storage capacitance connected to pixel electrodes of a plurality of pixels belonging to the scanning electrode becomes a first potential level  $V_c(+)$  in a case where a polarity of a video signal is positive and a second potential level  $V_c(-)$  in a case where the polarity of the video signal is negative, when the scanning electrode is selected, and in a case where a difference between the first potential level  $V_c(+)$  of the common electrode and a potential during a subsequent retention period is represented by  $\Delta V_c(+)$ , and a difference between the second potential level  $V_c(-)$  of the common electrode and a potential during a subsequent



Art Unit: 2673

retention period is represented by  $\gamma V_c(-)$ ,  $\gamma$  represented by  $\gamma = \text{ast} V_{cp}/2$  (where  $V_{cp} = A V_c(+)-A v_c(-)$ ) is set to be smaller in the portion away from the feeding ends in the screen, compared with the portion close thereto and assuming that a value of  $\gamma$  in the portion close to the feeding end; in the screen is  $\gamma(O)$ , a value of  $\gamma$  in the portion away from the feeding ends in the screen is  $\gamma(E)$ , and a value of  $\gamma$  in a portion in a middle there between in terms of a distance is  $\gamma(M)$  is smaller than  $[\gamma(O) + \gamma(E)]/2$  and  $V_{cp}$  takes a negative value and  $B = \text{agd} + \text{ast} (A V_{cc}/A V_{gon})$  (where  $A V_{gon} = V_{gon} - V_{goff}$ ,  $A V_{cc} = [A V_c(+) + A v_c(-)]/2$  is set to be larger in the portion away from the feeding ends in the screen, compared with the portion close thereto and a value of  $B$  in the portion close to the feeding ends in the screen is  $B(O)$ , a value of  $B$  in the portion away from the feeding ends in the screen is  $B(E)$ , and a value of  $B$  in a portion in a middle there between in terms of a distance is  $B(M)$ ,  $B(M)$  is larger than  $[B(O) + B(E)]/2$  and  $A V_{cc}$  is negative and  $\gamma$  represented by  $\gamma = \text{ast} V_{cp}/2$  (where  $V_{cp} = A V_c(+) - A v_c(-)$  is set to be smaller in the portion away from the feeding ends in the screen, compared with the portion close thereto, and  $B$  represented by  $B = \text{agd} + \text{ast} (A V_{cc}/A V_{gon})$  (where  $A V_{gon} = V_{gon} - V_{goff}$ ,  $A V_{cc} = [A V_c(+) + A v_c(-)]/2$  is set to be larger in the portion away from the feeding ends in the screen, compared with the portion close thereto.

The cited references on PTO 892 fail to either individually anticipate or in combination render obviousness, underlined above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

Art Unit: 2673

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Response to Arguments*

7. Applicant's arguments with respect to claims 52-55 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lebrun et al. (6,359,608 B1) Method and apparatus for driving a flat screen displays device using pixel pre-charging.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 703-605-1231. The examiner can normally be reached on M-F 8AM to 5PM.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-3054938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2673

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

PD

AU2673

December 30, 2004



**VIJAY SHANKAR**  
**PRIMARY EXAMINER**